

REMARKS

Claim Amendments

New independent claim 1 contains the features of former claims 1, 3 and 13, and is directed to “A decorative application, security application, security marking, security thread, or system for the verification or authentication of a document or object.” Decorative and security applications are terms of art understood by those of ordinary skill in the art to include applications, e.g., coatings, impregnations, etc.

The Rejections Under 35 USC § 112 and 101

The rejections to the form of the claims are overcome by the amendments.

The Rejections Under 35 USC § 102

Claims 1 and 3 are rejected as allegedly anticipated by EP 1 172 201.

New independent claim 1 contains the features of former claims 1, 3 and 13. Since claim 13 was not rejected over EP ‘201, the amendment to the new independent claim readily overcomes this rejection.

Although not necessary, applicants provide the following brief comments regarding the teachings of EP ‘201.

EP ‘201 describes the production of an elastomer molded product, wherein LC polymer flakes are dispersed in an elastomer in order to improve the gas barrier properties of the elastomer (see abstract). Such elastomers are used in elastomeric products such as sheets, tubes, balls, tires, balloons etc. as described in [0002] of the reference.

Such disclosure does not anticipate and does not provide motivation to one of ordinary skill in the art to use the disclosed flakes in a decorative application, security application, security marking, security thread, or in a system for the verification or authentication of a document or object. The disclosed uses and disclosed gas barrier properties of elastomers of the reference have nothing to do with the use of the LC flakes in the claimed applications. Nothing in the reference teaches or suggests to one of ordinary skill in the art the claimed invention, or even the problem to be solved by the present invention.

All the claims were rejected over U.S. 6,291,065.

The Office Action alleges that the flakes containing a non-chiral LC material are taught by the reference. Applicants respectfully disagree.

In column 3, lines 40-43 (pointed to by the Office Action) it is disclosed that “the **chiral polymerizable mesogenic material** comprises at least one chiral polymerizable mesogenic compound and at least one achiral polymerizable mesogenic compound.” (Emphasis added.) However, the presence of an achiral compound in the chiral material does not mean that such material is an achiral material. To the contrary, the reference expressly teaches that the material is indeed a **chiral material**. See underlined and bolded terms in the quoted passage above. Thus, there is no anticipation for at least this reason; the claims reciting a non-chiral material.

The influence of the chiral compound is described from col. 3, line 64, to column 4, line 5, where it is taught that the chiral compound induces a cholesteric structure to the achiral compound and that a small amount of a chiral substance is sufficient to achieve a cholesteric structure of the whole LC material. The resulting polymerized LC material exhibits a cholesteric behavior, which is chiral and not non-chiral as in the present claims.

Regarding claim 2, reciting that “liquid crystal material is a nematic or smectic liquid crystal material,” the Office Action points to column 2, lines 28-34, which discloses that the term “chiral liquid crystalline polymer” as used in the reference encompasses polymers that “exhibit a chiral mesophase, like e.g. a **chiral nematic** (=cholesteric) or a **chiral smectic** phase.” (Emphasis added.)

Chiral nematic” and “**chiral** smectic” are expressions which stand for materials having a **chiral** mesophase, which is the contrary to the **non-chiral** LC material of the present flakes. The resulting polymerized LC material of US ‘065 exhibits, e.g., a cholesteric behavior, which is chiral behavior and not non-chiral as in the present claims.

Since the optical behavior of chiral and non-chiral pigments, e.g., flakes, are different as described, for example, in this application’s specification (see first three pages of the specification), one of ordinary skill in the art would not have found it obvious to use a non-chiral flake in an invention which teaches chiral flakes. Thus, not only is there no anticipation, but there is also no obviousness in view of the disclosure of US ‘065.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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Attorney Docket No.:MERCK-2962

Date: April 19, 2007

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